

SECTION C

This document covers cookies packaged in a flexible pouch for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PACKAGING REQUIREMENTS AND QUALITY ASSURANCE PROVISIONS FOR CID A-A-20295B, COOKIES, PACKAGED IN A FLEXIBLE POUCH, SHELF STABLE

Types, styles, flavors, bake types, and classes.

Type I, Style A, Flavor 1, Class 1 - Shortbread Cookies, Regular, Plain
Type I, Style E, Flavor 2, Class 1 - Sandwich cookies, Peanut butter
Type I, Style I, Flavor 1, Bake type a, Class 1 - Oatmeal Cookies, Regular, Plain, Crisp
Type I, Style J, Flavor 1, Bake type a, Class 1 - Chocolate Chip Cookies, Regular,
Plain, Crisp
Type I, Style J, Flavor 8, Bake type a, Class 1 - Chocolate Mint with Chocolate Chips
Cookies, Regular, Plain, Crisp
Type I, Style K, Bake type a, Class 1 - Kremsicle Cookies, Regular, Plain, Crisp
Type I, Style L, Bake type a, Class 1 - Toffee Crunch Cookies, Regular, Plain, Crisp
Type I, Style M, Bake type b, Class 1 - Molasses Cookies, Regular, Plain
Type I, Style P, Bake type b, Class 1 - Fig Bar, Regular
Type I, Style Q, Bake type a, Class 1 - White Chocolate Raspberry Cookies, Regular

Packages.

Package A - Meal, Cold Weather (MCW)
Package B - Food Packet, Long Range Patrol (LRP)
Package C - Meal, Ready-To-Eat (MRE)

C-2 PERFORMANCE REQUIREMENTS

A. Product standard. A sample shall be subjected to first article (FA) or product demonstration model (PDM) inspection as applicable, in accordance with the tests and inspections of Section E of the Packaging Requirements and Quality Assurance Provisions. The approved sample shall serve as the Product Standard. Should the contractor at any time

plan to, or actually produce the product using different raw material or process methodologies from the approved Product Standard, which result in a product non comparable to the Product Standard, the contractor shall arrange for a new or alternate FA or PDM approval. In any event, all product produced must meet all requirements of this document including Product Standard comparability.

B. Shelf life. The packaged product shall meet the minimum shelf life requirement of 36 months at 80°F.

C. Odor and flavor. The packaged cookies shall be free from foreign odors and flavors.

D. Net weight.

(1) Shortbread cookies. The net weight of one serving shall be not less than 43 grams.

(2) Sandwich cookies, peanut butter. The net weight of one serving shall be not less than 54 grams.

(3) Oatmeal cookies. The net weight of one serving shall be not less than 56 grams.

(4) Chocolate chip cookies, plain. The net weight of one serving shall be not less than 60 grams.

(5) Chocolate mint with chocolate chip cookies. The net weight of one serving shall be not less than 56 grams.

(6) Kreamsicle cookie. The net weight of one serving shall be not less than 56 grams.

(7) Toffee crunch cookie. The net weight of one serving shall be not less than 56 grams.

(8) Molasses cookie. The net weight of one serving shall be not less than 56 grams.

(9) Fig bar. The net weight of one serving shall be not less than 54 grams.

(10) White chocolate raspberry cookie. The net weight of one serving shall be not less than 56 grams.

E. Palatability and overall appearance. The finished product shall be equal to or better than the approved product standard in palatability and overall appearance.

F. Analytical Requirements.

(1) Nutrient content. The nutrient content of one serving is as follows:

<u>Cookie type</u>	<u>Calorie content not less than</u>
Shortbread cookies	210 calories
Sandwich cookies, peanut butter	250 calories
Oatmeal cookies	280 calories
Chocolate chip cookies, plain	280 calories
Chocolate mint with chocolate chips	220 calories
Kreamsicle cookies	250 calories
Toffee crunch cookies	250 calories
Molasses cookies	230 calories
Fig bar	200 calories
White chocolate raspberry cookies	250 calories

(2) Oxygen content (not applicable to vacuum packed pouches). The oxygen content of the filled and sealed pouch shall not exceed 0.30 percent.

(3) Moisture content. The moisture content for plain chocolate chip cookies (type I, style J, flavor 1, bake type a) shall be not greater than 6.0 percent.

SECTION D

D-1 PACKAGING

A. Packaging. When specified, the cookie(s) with or without commercial wrapping and labeling shall be packed in a preformed or form-fill-seal barrier pouch as described below in accordance with the packaging conditions specified.

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Packaging conditions		
Cookie type	Oxygen scavenger	Vacuum packed
Shortbread		X
Sandwich	X	
Oatmeal		X
Chocolate chip	X	
Chocolate mint w/chocolate chips	X	
Kreamsicle		X
Toffee crunch		X
Molasses		X
Fig bars <u>1/</u>		X
White chocolate raspberry	X	

1/ For the fig bars that are vacuum packed, one or multiple, shall be inserted into the pouch in a two-high stack or positioned side by side prior to sealing.

(1) Preformed pouches.

a. Pouch material. The preformed pouch shall be fabricated from 0.002 inch thick ionomer or polyethylene film laminated or extrusion coated to 0.00035 inch thick aluminum foil which is then laminated to 0.0005 inch thick polyester. The three plies shall be laminated with the polyester on the exterior of the pouch. All tolerances for thickness of pouch material shall be plus or minus 20 percent. The material shall show no evidence of delamination, degradation, or foreign odor when heat sealed or fabricated into pouches. The material shall be suitably formulated for food packaging and shall not impart an odor or flavor to the product. For package A (MCW) the complete exterior surface of the pouch shall be colored white overall with a color in the range of 37778 through 37886 of FED-STD-595, Colors Used in Government Procurement. For package B (LRP) and package C (MRE), the complete exterior surface of the pouch shall be uniformly colored in the range of 20219, 30219, 30279, 30313, 30324, or 30450 of FED-STD-595.

b. Pouch construction. The pouch shall be a flat style preformed pouch having maximum inside dimensions not to exceed 5 inches wide by 7 inches long. The pouch shall be made by heat sealing three edges with 3/8 inch (-1/8 inch, +3/16 inch) wide seals. The heat seals shall be made in a manner that will assure hermetic seals. The side and bottom seals shall have an average seal strength of not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width when

tested as specified in E-6,A,(4),a. Alternatively, the pouch shall exhibit no rupture or seal separation greater than 1/16 inch or seal separation that reduces the effective closure seal width to less than 1/16 inch when tested for internal pressure resistance as specified in E-6,A,(4),c. A tear notch shall be provided on one outside edge or two opposite outside edges of the pouch to facilitate easy opening of the filled and sealed pouch. A 1/8 inch ($\pm 1/16$ inch) wide lip may be incorporated at the open end of the pouch to facilitate opening and filling of the pouch.

c. Pouch filling and sealing. When specified in D-1,A., product shall be inserted into the pouch and the filled pouch shall be sealed under a vacuum level of 8 to 12 inches of mercury with a minimum 1/8 inch wide heat seal. When specified, the commercially wrapped and labeled package of cookie(s) and one oxygen scavenger packet shall be inserted into the pouch. The filled pouch shall be sealed. The closure seal shall be free of foldover wrinkles or entrapped matter that reduces the effective closure seal width to less than 1/16 inch. Seals shall be free of impression or design on the seal surface that would conceal or impair visual detection of seal defects. The average seal strength shall be not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width when tested as specified in E-6,A,(4),b. Alternatively, the filled and sealed pouch shall exhibit no rupture or seal separation greater than 1/16 inch or seal separation that reduces the effective closure seal width to less than 1/16 inch when tested for internal pressure resistance as specified in E-6,A,(4),c.

(2) Horizontal form-fill-seal pouches.

a. Pouch material. The horizontal form-fill-seal pouch shall consist of a formed tray-shaped body with a flat sheet, heat sealable cover or a tray-shaped body with a tray-shaped heat sealable cover. The tray-shaped body and the tray-shaped cover shall be fabricated from a 3-ply flexible laminate barrier material consisting of, from outside to inside, 0.0009 inch thick oriented polypropylene bonded to 0.0007 inch thick aluminum foil with 10 pounds per ream pigmented polyethylene or adhesive and bonding the opposite side of the aluminum foil to 0.003 inch thick ionomer or a blend of not less than 50 percent linear low density polyethylene and polyethylene. The linear low density polyethylene portion of the blend shall be the copolymer of ethylene and octene-1 having a melt index range of 0.8 to 1.2 g/10 minutes in accordance with ASTM D1238-04 Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer and a density range of 0.918 to 0.922 g/cc in accordance with ASTM D1505-03 Standard Test Method for Density of Plastics by the Density-Gradient Technique. Alternatively, 0.0005 inch thick polyester may be used in place

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of the oriented polypropylene as the outer ply of the laminate. The flat sheet cover shall be made of the same 3-ply laminate as specified for the tray-shaped body except the aluminum foil thickness may be 0.00035 inch. All tolerances for thickness of pouch materials shall be plus or minus 20 percent. The color requirements of the exterior (oriented polypropylene or polyester side) of the laminate shall be as specified in D-1, A,(1),a. The material shall show no evidence of delamination, degradation, or foreign odor when heat sealed or fabricated into pouches. The material shall be suitably formulated for food packaging and shall not impart any odor or flavor to the product.

b. Pouch construction. The tray-shaped body and the tray-shaped cover shall be formed by drawing the flexible laminate material into an appropriately shaped cavity. The flat cover shall be in the form of a flat sheet of the barrier material taken from roll stock. When specified, the cookie(s) shall be placed in the tray-shaped body of the pouch. The filled pouch body shall be hermetically sealed with a vacuum level of 12 to 14 inches of mercury when horizontal form-fill-seal equipment is used. When specified, the unit of commercially wrapped and labeled package of cookie(s) and one oxygen scavenger packet shall be placed into the tray-shaped body of the pouch. The filled pouch body shall be hermetically sealed. Pouch closure shall be effected by heat sealing together the cover and body along the entire pouch perimeter. The closure seal width shall be a minimum of 1/8 inch. The closure seal shall have an average seal strength of not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width when tested as specified in E-6,A,(4),b. Alternatively, the filled and sealed pouch shall exhibit no rupture or seal separation greater than 1/16 inch or seal separation that reduces the effective closure seal width to less than 1/16 inch when tested for internal pressure resistance as specified in E-6,A,(4),c. The maximum outside dimensions of the sealed pouch shall be 6 inches wide by 8-5/8 inches long. The closure seal width shall be a minimum of 1/8 inch. A tear notch or serrations shall be provided on one outside edge or two opposite outside edges of the pouch to facilitate easy opening of the filled and sealed pouch. The sealed pouch shall not show any evidence of material degradation, aluminum stress cracking, delamination or foreign odor. Heat seals shall be free of occluded matter. Seals shall be free of impression or design on the seal surface that would conceal or impair visual detection of seal defects.

B. Oxygen scavenger packet. The oxygen scavenger (absorber) shall be constructed of materials that are safe for direct or indirect food contact and shall be suitable for use with edible products. The oxygen scavenger (absorber) shall be in compliance with all applicable FDA and USDA regulations.

D-2 LABELING

A. Pouches. Each pouch shall be clearly printed or stamped, in a manner that does not conceal or impair visual examination of heat seals or damage the pouch, with permanent black ink or other, dark, contrasting color which is free of carcinogenic elements. Pre-printed information, information printed prior to sealing or information printed by non-contact type printing equipment may be located anywhere on the pouch (in one complete print). Information printed subsequent to sealing by contact type printing equipment may be located anywhere on the pouch, except the closure seal area. The label shall contain the following information:

- (1) Name and flavor of product (letters not less than 1/8 inch high)
- (2) Date 1/
- (3) Net Weight 2/
- (4) Contractor's name and address
- (5) "Nutrition Facts" label in accordance with the Nutrition Labeling and Education Act (NLEA) and all applicable FDA/USDA regulations 2/

1/ Each pouch shall have the date of pack noted by using a four-digit code beginning with the final digit of the current year followed by the three digit Julian day code. For example, 17 August 2004 would be coded as 4230. The Julian day code shall represent the day the product was packaged into the pouch.

2/ Shall appear on the commercial package or the barrier pouch, as applicable.

D-3 PACKING

A. Packing for shipment to ration assembler. Not more than 40 pounds of pouched product shall be packed in a fiberboard shipping container constructed in accordance with style RSC-L, class domestic, variety SW, grade 200 of ASTM D5118/D5118M-95(2001) Standard Practice for Fabrication of Fiberboard Shipping Boxes. Each container shall be securely closed in accordance with ASTM D1974-98 (2003) Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

D-4 MARKING

A. Shipping containers. Shipping containers shall be marked in accordance with DSCP Form 3556, Marking Instructions for Boxes, Sacks and Unit Loads of Perishable and Semiperishable Subsistence.

SECTION E INSPECTION AND ACCEPTANCE

The following quality assurance criteria, utilizing ANSI/ASQC Z1.4-1993, Sampling Procedures and Tables for Inspection by Attributes, are required. Unless otherwise specified, Single Sampling Plans indicated in ANSI/ASQC Z1.4-1993 will be utilized. When required, the manufacturer shall provide the certificate(s) of conformance to the appropriate inspection activity. Certificate(s) of conformance not provided shall be cause for rejection of the lot.

A. Definitions.

(1) Critical defect. A critical defect is a defect that judgment and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining, or depending on the item; or a defect that judgment and experience indicate is likely to prevent the performance of the major end item, i.e., the consumption of the ration.

(2) Major defect. A major defect is a defect, other than critical, that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.

(3) Minor defect. A minor defect is a defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.

B. Classification of inspections. The inspection requirements specified herein are classified as follows:

(1) Product standard inspection. The first article or product demonstration model shall be inspected in accordance with the provisions of this document and evaluated for overall appearance and palatability. Any failure to conform to the performance requirements or any appearance or palatability failure, shall be cause for rejection of the lot. The approved first article or product demonstration model shall be used as the product standard for periodic review evaluations. All food components that are inspected by the USDA shall be subject to periodic review sampling and evaluation. The USDA shall select sample units during production of contracts and submit them to the following address for evaluation:

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US Army Soldier & Biological Chemical Command
Soldiers System Ctr., Natick Soldier Center
Attn: AMSSB-RCF-F(N)
15 Kansas Street
Natick, MA 01760-5018

One lot shall be randomly selected during each calendar month of production. Six (6) sample units of each item produced shall be randomly selected from that one production lot. The six (6) sample units shall be shipped to Natick within five working days from the end of the production month and upon completion of all USDA inspection requirements. The sample units will be evaluated for the characteristics of appearance, odor, flavor, texture and overall quality.

(2) Conformance inspection. Conformance inspection shall include the product examination and the methods of inspection cited in this section.

E-5 QUALITY ASSURANCE PROVISIONS (PRODUCT)

A. Product examination. The finished product shall be examined for compliance with the performance requirements in A-A-20295B and specified in Section C of the Packaging Requirements and Quality Assurance Provisions document utilizing the double sampling plans indicated in ANSI/ASQC Z1.4 - 1993. The lot size shall be expressed in pouches. The sample unit shall be the contents of one pouch. The inspection level shall be S-3 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 1.5 for major defects and 4.0 for minor defects. Defects and defect classifications are listed in table I.

TABLE I. Product defects 1/ 2/

Category		Defect
<u>Major</u>	<u>Minor</u>	
		<u>General</u>
101		Product not type, style, flavor, bake type, and class as specified.
102		Pouch does not contain one intact oxygen scavenger packet. <u>3/</u>
103		Crushed cookie(s). <u>4/</u>
	201	Broken cookie(s). <u>5/</u>
		<u>Appearance and color</u>
	202	Exterior color of the shortbread cookie(s) not light tan to medium brown.
	203	Interior crumb of the shortbread cookie(s) not a lighter color than the surface.
	204	Sandwich cookie(s) not tan to medium brown.
104		Sandwich cookie(s) not flat.
105		Sandwich cookie(s) does not contain at least 20 percent, by weight, of filling. <u>6/</u>
	205	Oatmeal cookie(s) not tan to medium brown.
	206	Chocolate chip cookie(s) not tan to medium brown.
	207	Chocolate mint with chocolate chips cookie(s) not dark brown.
	208	Exterior color of Kremsicle cookie(s) not uneven pale to medium golden brown with some surface cracking.

TABLE I. Product defects 1/ 2/ continued

Category		Defect
<u>Major</u>	<u>Minor</u>	
	209	Interior crumb of Kreamsicle cookie(s) not pale gold with evenly distributed orange colored chips.
	210	Toffee crunch cookie(s) not uneven pale to medium golden brown exterior or crumb not with evenly distributed pieces of melted toffee candy bits with some surface cracking.
	211	Molasses cookie(s) not dark gold/brown exterior and interior crumb.
	212	Fig bar cookie(s) do not have a uniform bakery covering and fig filling.
	213	Fig bar covering not golden brown color.
106		Fig bar covering soggy.
107		Fig bar cookie(s) does not contain at least 50 percent, by weight, of filling. <u>6/</u>
	214	Exterior color of white chocolate raspberry cookie(s) not light tan to medium brown or not an even distribution of white chocolate chips.
	215	Interior crumb of white chocolate raspberry cookie(s) not a lighter color than the surface with evenly distributed white chocolate chips.
<u>Odor and flavor</u>		
108		Shortbread cookie(s) not a sweet, buttery odor or flavor.
109		Sandwich cookie(s) not a peanut butter flavor.
110		Oatmeal cookies(s) not a distinct oatmeal flavor.

TABLE I. Product defects 1/ 2/ continued

Category		Defect
<u>Major</u>	<u>Minor</u>	
111		Chocolate chip cookie(s) not a chocolate flavor.
112		Chocolate mint with chocolate chips cookie(s) not a mint chocolate flavor.
113		Kreamsicle cookie(s) not sweet, buttery, mild orange flavor cookie with orange flavored chips.
114		Toffee Crunch cookie(s) not sweet, buttery, toffee/vanilla flavor with toffee chips.
115		Molasses cookie(s) not sweet, cooked molasses and mild spices.
116		Fig bar cookie(s) not a fig odor or flavor.
117		The white chocolate raspberry cookie(s) not sweet raspberry and white chocolate odor or flavor.
<u>Texture</u>		
118		Shortbread cookie(s) not a dense and not a tender texture.
119		Sandwich cookie(s) not a tender crispness.
	216	Sandwich cookie(s) filling not creamy and not evenly distributed.
120		Oatmeal cookie(s) not crisp.
121		Oatmeal cookie(s) not a distinct oatmeal texture.

TABLE I. Product defects 1/ 2/ continued

Category		Defect
<u>Major</u>	<u>Minor</u>	
	217	Chocolate chip cookie(s) do not have a uniform distribution of chocolate chips.
122		Chocolate chip cookie(s) not crispy, crunchy, and not a firm bite or slightly crumbly.
	218	Chocolate mint with chocolate chips cookie(s) do not have a uniform distribution of chocolate chips.
123		Chocolate mint with chocolate chips cookie(s) not crispy, crunchy, and not a firm bite or slightly crumbly.
124		Kreamsicle cookie(s) not firm and not crisp.
125		Toffee crunch cookie(s) not firm and not crisp.
126		Molasses cookie(s) not slightly soft and not chewy.
	219	Fig bar cookie(s) not soft, but dry or hard.
	220	White chocolate raspberry cookie(s) not tender and not crisp.
	221	White chocolate chips not a soft bite.
		<u>Weight</u>
	222	Net weight of an individual pouch not as specified.

1/ Presence of any foreign materials such as, but not limited to, dirt, insect parts, hair, wood, glass, metal or mold, or any foreign odors or flavors such as, but not limited to burnt, scorched, rancid, sour, or stale or foreign color shall be cause for rejection of the lot.

2/ Finished product not equal to or better than the approved product standard in palatability and overall appearance shall be cause for rejection of the lot.

3/ Not applicable to Type I, Style A, Shortbread Cookies, Type I, Style I, Oatmeal Cookies, Type I, Style K, Kreamsicle Cookies, Type I, Style L, Toffee Crunch Cookies, Type I, Style M, Molasses Cookies, Type I, Style P, Fig Bar.

4/ Ten grams of cookie crumbs, i.e., not discernible pieces, per pouch. For fig bar cookie(s) more than 1/4 of cookie(s) is crushed.

5/ a. For pouch with one or two cookies, more than three broken pieces per cookie.

b. For pouch with three or more cookies, more than half the cookies broken into three pieces.

c. For fig bar cookie(s), more than 1/4 of cookie(s) is broken.


6/ Weight of sandwich filling and fig bar filling shall be verified with a certificate of conformance.

B. Methods of inspection.

(1) Shelf life. The contractor shall provide a certificate of conformance that the product has a 3 year shelf life when stored at 80°F. Government verification may include storage for 6 months at 100°F or 36 months at 80°F. Upon completion of either storage period, the product will be subjected to a sensory evaluation panel for appearance and palatability and must receive an overall score of 5 or higher based on a 9 point hedonic scale to be considered acceptable.

(2) Net weight.

a. Commercially wrapped product with oxygen scavenger pouch. The net weight shall be verified with the label on the commercial package. Product not conforming to the net weight requirement in Section C of this Packaging Requirements and Quality Assurance Provisions document shall be cause for rejection of the lot.

b. Vacuum packed pouch. The net weight of the filled and sealed pouches shall be determined by weighing each sample unit on a suitable scale tared with a representative empty pouch. Results shall be reported to the nearest  am.

c. Commercially wrapped vacuum packed product pouch. The net weight shall be verified with the label on the vacuum packed commercial package. Product not conforming to the net weight requirement in Section C of this Packaging Requirements and Quality Assurance Provisions document shall be cause for rejection of the lot.

Oxygen scavenger pouch. The net weight shall be determined by weighing each sample unit on a suitable scale tared with a representative empty pouch and an oxygen scavenger packet. Results shall be reported the nearest 1 gram.

(3) Nutrient content. The calorie content shall be verified by the NLEA "Nutrition Facts" label. Product not conforming to the calorie content as specified in Section C of this document shall be cause for rejection of the lot.

(4) Oxygen content testing (not applicable to vacuum packed pouches). Eight filled and sealed pouches shall be randomly selected from one production lot and individually tested for oxygen content in accordance with any USDA approved test method. Testing shall be accomplished after the filled and sealed pouches have been allowed to equilibrate at room temperature for not less than 48 hours from the time of sealing. Test results shall be reported to the nearest 0.01 percent. Verification will be conducted through actual testing by a Government laboratory. Any individual result not conforming to the oxygen content requirement shall be cause for rejection of the lot.

(5) Moisture content testing shall be in accordance with A-A-20295B.

E-6 QUALITY ASSURANCE PROVISIONS (PACKAGING AND PACKING MATERIALS)

A. Packaging.

(1) Pouch material certification. Material listed below may be accepted on the basis of a contractor's certification of conformance to the indicated requirements. In addition, compliance to the requirements for inside pouch dimensions and dimensions of manufacturer's seals may be verified by certificate of conformance.

<u>Requirement</u>	<u>Requirement paragraph</u>	<u>Test procedure</u>
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Thickness of films for laminated material	D-1,A,(1),a and D-1,A,(2),a and D-1,B,(1),a	As specified in ASTM D 2103-03 <u>1/</u>
Aluminum foil thickness	D-1,A,(1),a and D-1,A,(2),a and D-1,B,(1),a	As specified in ASTM B 479-00 <u>2/</u>
Laminated material identification and construction	D-1,A,(1),a and D-1,A,(2),a and D-1,B,(1),a	Laboratory evaluation
Color of laminated material	D-1,A,(1),a and D-1,A,(2),a and D-1,B,(1),a	Visual evaluation by FED-STD-595 <u>3/</u>

1/ ASTM D 2103-03 Standard Specification for Polyethylene Film and Sheeting

2/ ASTM B 479-00 Standard Specification for Annealed Aluminum and Aluminum-Alloy Foil for Flexible Barrier, Food Contact, and Other Applications

3/ FED-STD-595 Colors Used in Government Procurement

(2) Unfilled preformed pouch certification. A certification of conformance may be accepted as evidence that unfilled pouches conform to the requirements specified in D-1,A,(1) a and b. When deemed necessary by the USDA, testing of the unfilled preformed pouches for seal strength shall be as specified in E-6,A,(4),a.

(3) Filled and sealed pouch examination. The filled and sealed pouches shall be examined for the defects listed in table II. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major defects and 2.5 for minor defects.

TABLE II. Filled and sealed pouch defects 1/

Category	Defect
<u>Major</u>	<u>Minor</u>
101	Tear, hole, or open seal.

102	Seal width less than 1/16 inch. <u>2/</u>
103	Presence of delamination. <u>3/</u>
104	Unclean pouch. <u>4/</u>
105	Pouch has foreign odor.
106	Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects. <u>5/</u>
107	Not packaged as specified.
108	Presence of stress cracks in the aluminum foil. <u>6/ 7/</u>
201	Label missing, incorrect, or illegible.
202	Tear notch or serrations missing or does not facilitate opening.
203	Seal width less than 1/8 inch but greater than 1/16 inch.
204	Presence of delamination. <u>3/</u>

1/ Any evidence of rodent or insect infestation shall be cause for rejection of the lot.

2/ The effective closure seal is defined as any uncontaminated, fusion bonded, continuous path, minimum 1/16 inch wide, from side seal to side seal that produces a hermetically sealed pouch.

3/ Delamination defect classification:

Major - Delamination of the outer ply in the pouch seal area that can be propagated to expose aluminum foil at the food product edge of the pouch after manual flexing of the delaminated area. To flex, the delaminated area shall be held between the thumb and forefinger of each hand with both thumbs and forefingers touching each other. The delaminated area shall then be rapidly flexed 10 times by rotating both hands in alternating clockwise- counterclockwise directions. Care shall be exercised when flexing delaminated

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areas near the tear notches to avoid tearing the pouch material. After flexing, the separated outer ply shall be grasped between thumb and forefinger and gently lifted toward the food product edge of the seal or if the separated area is too small to be held between thumb and forefinger, a number two stylus shall be inserted into the delaminated area and a gentle lifting force applied against the outer ply. If separation of the outer ply can be made to extend to the product edge of the seal with no discernible resistance to the gentle lifting, the delamination shall be classified as a major defect. Additionally, spot delamination of the outer ply in the body of the pouch that is able to be propagated beyond its initial borders is also a major defect. To determine if the laminated area is a defect, use the following procedure: Mark the outside edges of the delaminated area using a bold permanent marking pen. Open the pouch and remove the contents. Cut the pouch transversely not closer than 1/4 inch ($\pm 1/16$ inch) from the delaminated area. The pouch shall be flexed in the area in question using the procedure described above. Any propagation of the delaminated area, as evidenced by the delaminated area exceeding the limits of the outlined borders, shall be classified as a major defect.

Minor - Minor delamination of the outer ply in the pouch seal area is acceptable and shall not be classified as a minor defect unless it extends to within 1/16 inch of the food product edge of the seal. All other minor outer ply delamination in the pouch seal area or isolated spots of delamination in the body of the pouch that do not propagate when flexed as described above shall be classified as minor defects.

4/ Outer packaging shall be free from foreign matter which is unwholesome, has the potential to cause pouch damage (for example, glass, metal filings) or generally detracts from the clean appearance of the pouch. The following examples shall not be classified as defects for unclean:

a. Foreign matter which presents no health hazard or potential pouch damage and which can be readily removed by gently shaking the package or by gently brushing the pouch with a clean dry cloth.

b. Dried product which affects less than 1/8 of the total surface area of one pouch face(localized and aggregate).

c. Water spots.

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5/ If doubt exists as to whether or not the sealing equipment leaves an impression or design on the closure seal surface that could conceal or impair visual detection of seal defects, samples shall be furnished to the contracting officer for a determination as to acceptability.

6/ Applicable to form-fill-seal pouches only.

7/ The initial examination shall be a visual examination of the closed package. Any suspected visual evidence of stress cracks in the aluminum foil (streaks, breaks, or other disruptions in the laminated film) shall be verified by the following physical examination. To examine for stress cracks, the inside surface of both tray-shaped bodies shall be placed over a light source and the outside surface observed for the passage of light. Observation of light through the pouch material in the form of a curved or straight line greater than 2 mm in length shall be evidence of the presence of stress cracks. Observation of light through the pouch material in the form of a curved or straight line 2 mm in length or smaller or of a single pinpoint shall be considered a pinhole. Observation of ten or more pinholes per pouch shall be evidence of material degradation.

(4) Seal testing. The pouch seals shall be tested for seal strength as required in a, b, or c, as applicable.

a. Unfilled preformed pouch seal testing. The seals of the unfilled preformed pouch shall be tested for seal strength in accordance with ASTM F88-00 Standard Test Method for Seal Strength of Flexible Barrier Materials. The lot size shall be expressed in pouches. The sample size shall be the number of pouches indicated by inspection level S-1. Three adjacent specimens shall be cut from each of the three sealed sides of each pouch in the sample. The average seal strength of any side shall be calculated by averaging the three specimens cut from that side. Any average seal strength of less than 6 pounds per inch of width or any test specimen with a seal strength of less than 5 pounds per inch of width shall be cause for rejection of the lot.

b. Pouch closure seal testing. The closure seals of the pouches shall be tested for seal strength in accordance with ASTM F 88-00. The lot size shall be expressed in pouches. The sample size shall be the number of pouches indicated by inspection level S-1. For the closure seal on preformed pouches, three adjacent specimens shall be cut from the closure seal of each pouch in the sample. For the form-fill-seal pouches, three adjacent specimens shall be cut from each side and each end of each pouch in the sample. The average seal strength of any side, end or closure shall be calculated by averaging the three specimens cut from that side, end or closure. Any average seal strength of less than 6 pounds per inch of

width or any test specimen with a seal strength of less than 5 pounds per inch of width shall be cause for rejection of the lot.

c. Internal pressure test. The internal pressure resistance shall be determined by pressurizing the pouches while they are restrained between two rigid plates. The sample size shall be the number of pouches indicated by inspection level S-1. If a three seal tester (one that pressurizes the pouch through an open end) is used, the closure seal shall be cut off for testing the side and bottom seals of the pouch. For testing the closure seal, the bottom seal shall be cut off. The pouches shall be emptied prior to testing. If a four-seal tester (designed to pressurize filled pouches by use of a hypodermic needle through the pouch wall) is used, all four seals can be tested simultaneously. The distance between rigid restraining plates on the four-seal tester shall be equal to the thickness of the product +1/16 inch. Pressure shall be applied at the approximate uniform rate of 1 pound per square inch gage (psig) per second until 14 psig pressure is reached. The 14 psig pressure shall be held constant for 30 seconds and then released. The pouches shall then be examined for separation or yield of the heat seals. Any rupture of the pouch or evidence of seal separation greater than 1/16 inch in the pouch manufacturer's seal shall be considered a test failure. Any seal separation that reduces the effective closure seal width to less than 1/16 inch (see table II, footnote 2/) shall be considered a test failure. Any test failure shall be cause for rejection of the lot.

B. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in table III below. The lot size shall be expressed in shipping containers. The sample unit shall be one shipping container fully packed. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 10.0 for total defects.

TABLE III. Shipping container and marking defects

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Marking omitted, incorrect, illegible, or improper size, location sequence or method of application.
102		Inadequate workmanship. 1/

201 More than 40 pounds of product.

1/ Inadequate workmanship is defined as, but not limited to, incomplete closure of container flaps, loose strapping, inadequate stapling, improper taping, or bulged or distorted container.

SECTION J REFERENCE DOCUMENTS

DSCP FORMS

DSCP FORM 3556 Marking Instructions for Boxes, Sacks and Unit Loads of
Perishable and Semiperishable Subsistence

FEDERAL STANDARD

FED-STD-595 Colors Used in Government Procurement

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ)

ANSI/ASQCZ1.4-1993 Sampling Procedures and Tables for Inspection by Attributes

ASTM International

B479-00 Standard Specification for Annealed Aluminum and
Aluminum-Alloy Foil for Flexible Barrier, Food
Contact, and Other Applications

D1238-04 Standard Test Method for Melt Flow Rates of
Thermoplastics by Extrusion Plastometer

D1505-03 Standard Test Method for Density of Plastics by the
Density-Gradient Technique

PKG & QA(MRE)
A-A-20295B
17 August 2004
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D1974-98(2003)	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
D2103-03	Standard Specification for Polyethylene Film and Sheeting
D5118/D5118M-95 (2001)	Standard Practice for Fabrication of Fiberboard Shipping Boxes
F88-00	Standard Test Method for Seal Strength of Flexible Barrier Materials

AOAC INTERNATIONAL

Official Methods of Analysis of the Association of Official Analytical Chemists
International

TO: DSCP-HRUT (D. Anthony/4477)

SUBJECT: ES04-101 (DSCP-SS-04-05959); Document changes, PKG & QA for CID-A-A-20295A, Cookies, Packaged in a Flexible Pouch, Shelf Stable and PKG & QA (MRE) for CID-A-A-20295B, Cookies, Packaged in a Flexible Pouch, Shelf Stable.

1. The Natick Soldier Center (NSC) has reviewed the subject documents and concurs with the following changes to E-5,B,(2) Net weight in PKG & QA for both A and B versions of CID-A-A-20295:

a. To address vendor packaging their own cookies without a vacuum with an oxygen scavenger packet, add new subsection:

“d. Product with oxygen scavenger. The net weight shall be determined by weighing each sample unit on a suitable scale tared with a representative empty pouch and an oxygen scavenger packet. Results shall be reported the nearest 1 gram.”

b. To allow for the same tolerance on the vacuum packed pouch as is for the oxygen scavenger pouch:

in “b. Vacuum packed pouch” delete “0.1 grams” and insert “1 gram.”

2. It is recommended that DSCP provide a contract modification to the current MRE XXIV that allows the contractors to utilize the changes for CID-A-A-20295A. The CID A-A-20295B changes apply to the MRE XXV procurement.

3. POC for this action is Ms. Mary Canniff, X 4503.

2 Encls

DONALD A. HAMLIN
Team Leader
DoD Food Engineering Services Team

(M. Canniff)

CF: NSC:

Acheson, M
Arcidiacono, C
Aylward, J
Canniff, M
Edwards, J
Friel, M
Green, L
Hamlin, D
Hill, B
Kennedy, J

Loveridge, V
MacDonald, K
Norton, C
Richards, A
Sherman, P
Valvano, R

CF: DSCP & SVCs:

Anthony, D
Gallagher, S
Galligan, C
Gordon, T
Haldeman, E
Kavanagh, D
Lowry, A
Malason, M
Miller, G
Richardson, H
Salerno, L
Spencer, B
Tucker, S